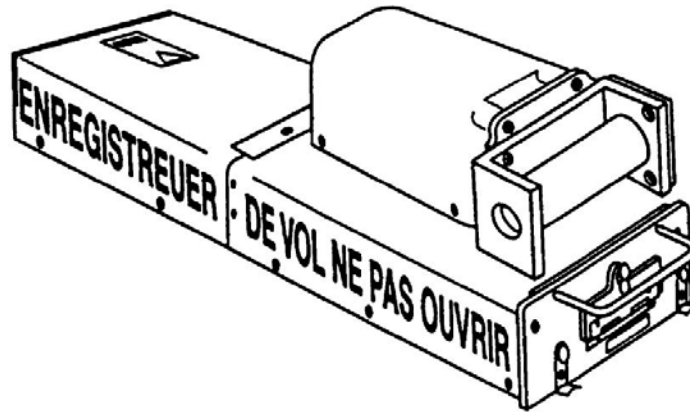


Installation of Combined Voice and Flight Data Recorder

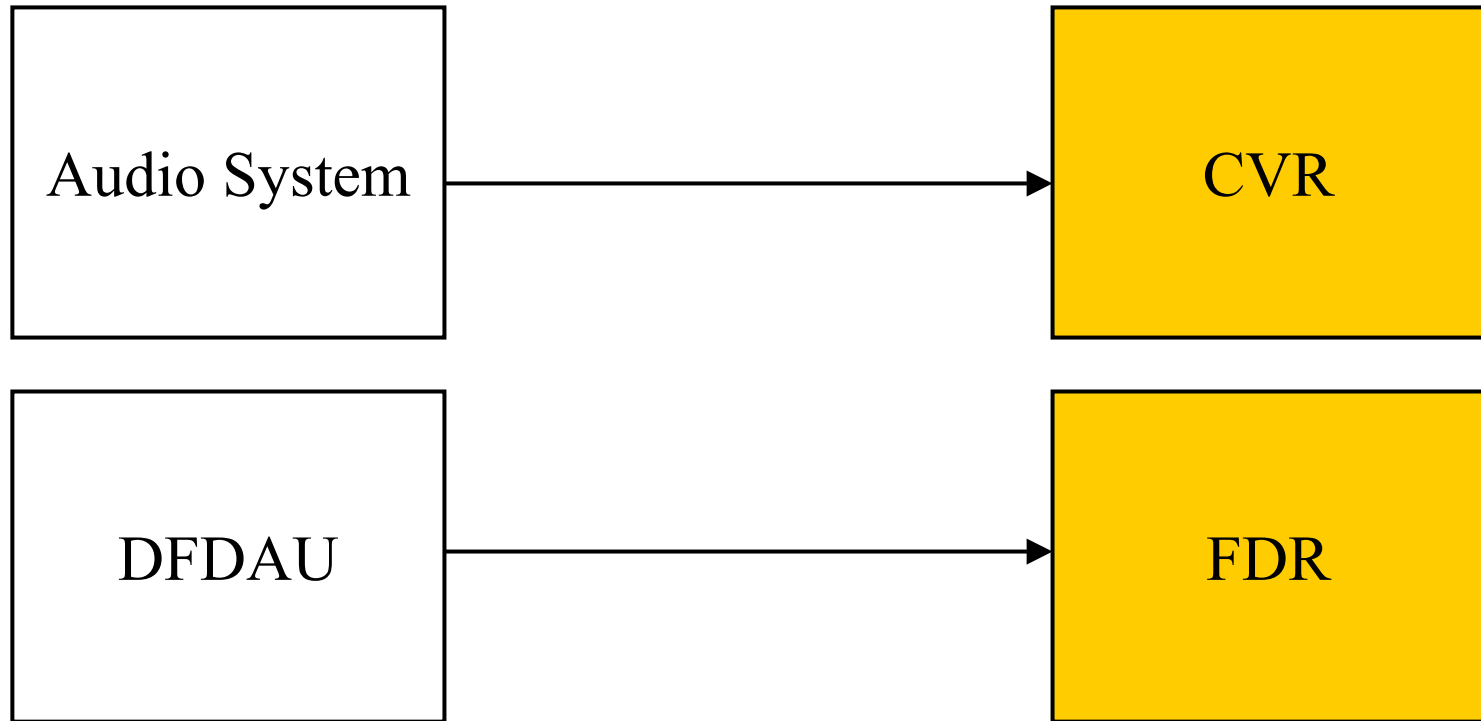
Robert Swanson, FedEx Express



Why a Combi?

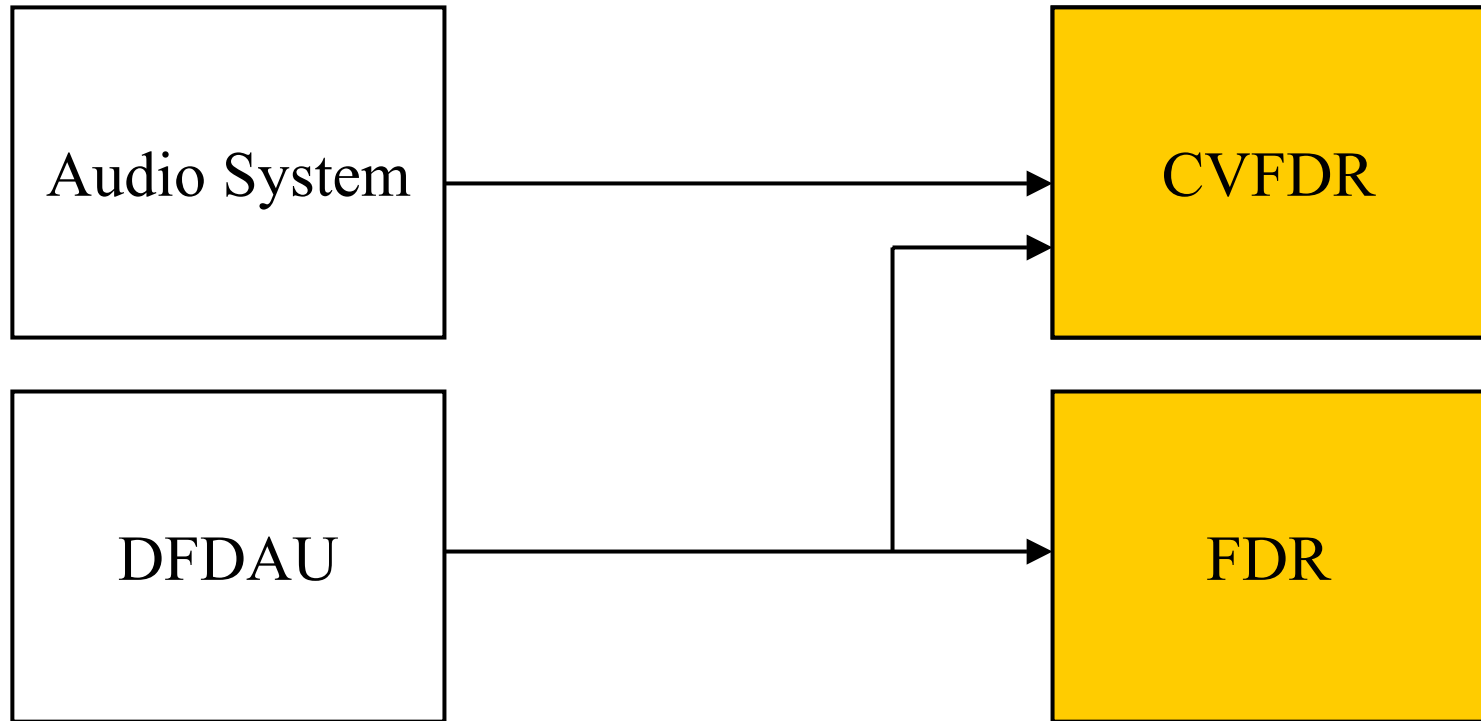
- Had old tape-based CVR's installed
- Tape became obsolete
- Needed to put something on
- If installing new recorder, plan for future:
2-hour voice, data, datalink
- Little or no cost difference from CVR to CVFDR

Scope of Installation



Traditional Configuration

Scope of Installation



Redundant Data Configuration

Some Benefits

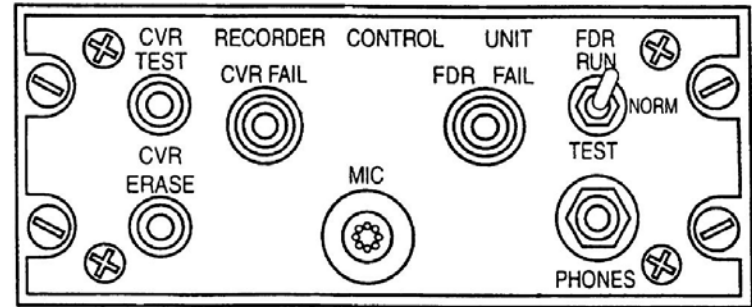


- 2 copies of data
- CVFDR contains longer duration of data
Memory sized for 512 wps
- MEL relief for FDR
(FAA policy letter PL-87, rev. 6)

"On aircraft that have been modified with a CVFDR, where CVFDR replaces the stand alone CVR and adds redundant FDR functionality, failure of either the Digital Flight Data Recorder (DFDR), or FDR Function of CVFDR, does not invoke the need to make stops for repairs at designated airports and can be deferred at the 'C' category."

Installation Details

- Changed control unit to add fault lights
- Used existing spare wires for lights
- Paralleled DFDAU-FDR databus to CVFDR
- No change to FDR system, so no recertification required
- Data read-outs from both recorders were compared to verify exact FDR data



Some Good and Not-So-Good

Good



- MEL relief
- Have been able to retrieve data that wasn't available on FDR (longer than 25 hours)

Not-So-Good

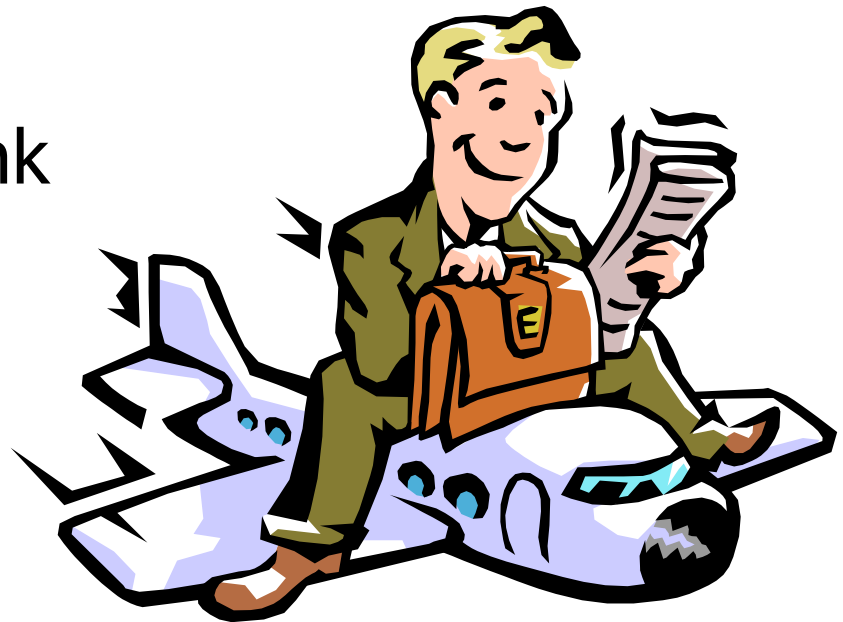


- Some initial confusion regarding FDR Fail light and FDR Test switch on CVFDR panel
- Concept shift

Next?

NTSB Recommendation A-99-17

- Dual-redundant CVFDR
- Forward / Aft locations
- 2 hour CVR with datalink
- RIPS



Questions?

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